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International application number: PCT/US05/006854

International filing date: 04 March 2005 (04.03.2005)

Document type: Certified copy of priority document

Document details: Country/Office: US
Number: 60/551,077
Filing date: 08 March 2004 (08.03.2004)

Date of receipt at the International Bureau: 31 March 2005 (31.03.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse

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March 17, 2005

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APPLICATION NUMBER: 60/551,077

FILING DATE: *March 08, 2004*

RELATED PCT APPLICATION NUMBER: *PCT/US05/06854*



Certified by

Under Secretary of Commerce
for Intellectual Property
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. EV320050389US

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
AKHTAR	HASEEB	GARLAND, TX, USA

Additional inventors are being named on the _____ separately numbered sheets attached hereto

TITLE OF THE INVENTION (500 characters max)

RESOURCE RESERVATION TO MINIMIZE CALL SETUP DELAY FOR PTT

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

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ENCLOSED APPLICATION PARTS (check all that apply)

<input checked="" type="checkbox"/> Specification Number of Pages <u>8</u>	<input type="checkbox"/> CD(s), Number _____
<input type="checkbox"/> Drawing(s) Number of Sheets _____	<input type="checkbox"/> Other (specify) _____
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76	

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.	FILING FEE Amount (\$) \$160.00
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees.	
<input checked="" type="checkbox"/> The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: <u>50-0210</u>	
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.	

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

[Page 1 of 2]

Respectfully submitted,

SIGNATURE

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Date MARCH 8, 2004

REGISTRATION NO. 25,231

(if appropriate)

Docket Number: 16853RRUS01P

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Provisional Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Provisional Patent Application

Title:

**Resource Reservation to Minimize
Call Setup Delay for PTT**

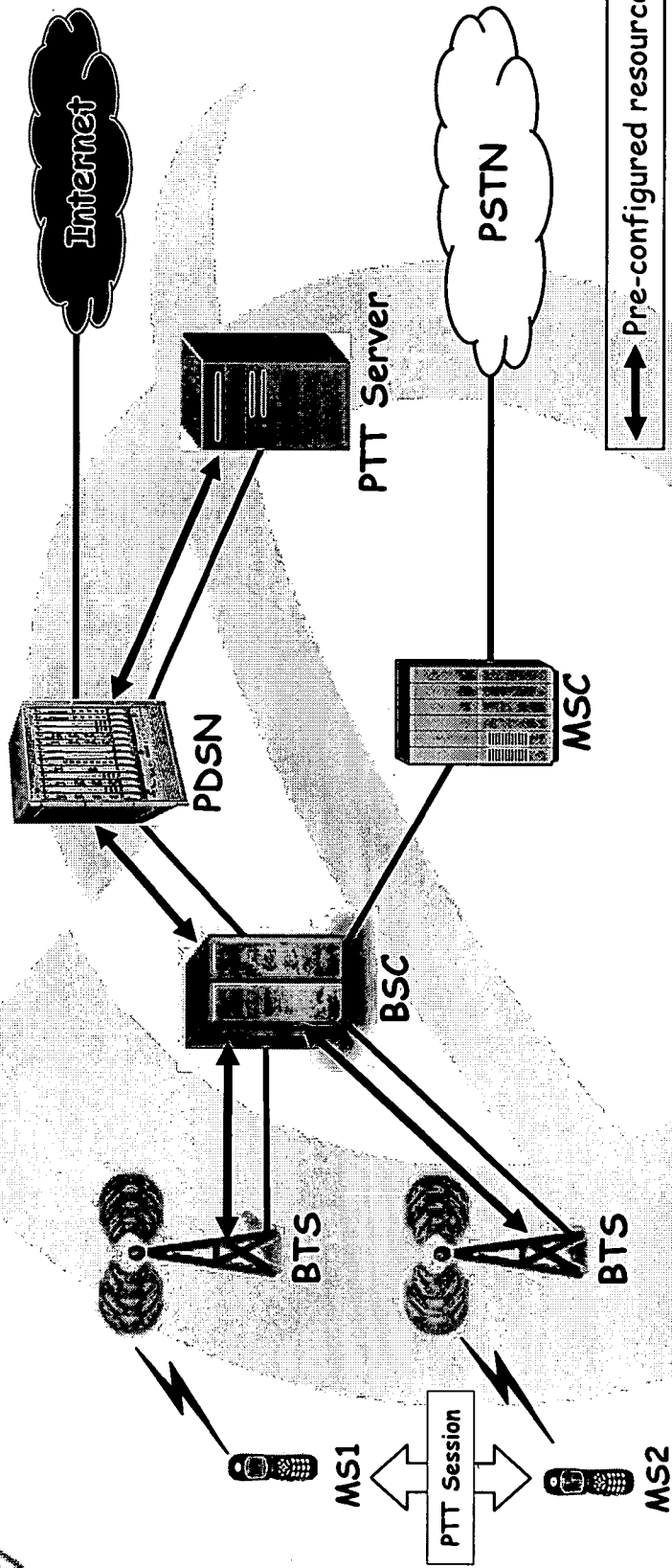
Inventors:

Haseeb Akhtar, Garland, TX, USA

Overview

- Call setup time is an important quality metric for PTT (Push To Talk) application
- Call setup time can be substantially reduced by reserving resources for PTT users a-priori
 - Both access and core networks are impacted
- The BSC (Base Station Controller) routes the PTT calls through the pre-provisioned channels as soon as the user is identified
 - The access network must be able to identify the PTT users
- Signaling (such as SIP) and bearer (VoIP packets) traffics are routed through the dedicated channels
- BSC, PDSN and PTT Server may be connected through a managed IP network
 - Packets can be routed through dedicated IP routes with highest QoS
 - Packets can also be routed through dedicated Ethernet (10xBT) interface
- BTS, BSC and MSC may be connected through T1/E1 trunks

Dedicated Resources for PTT – Example 1



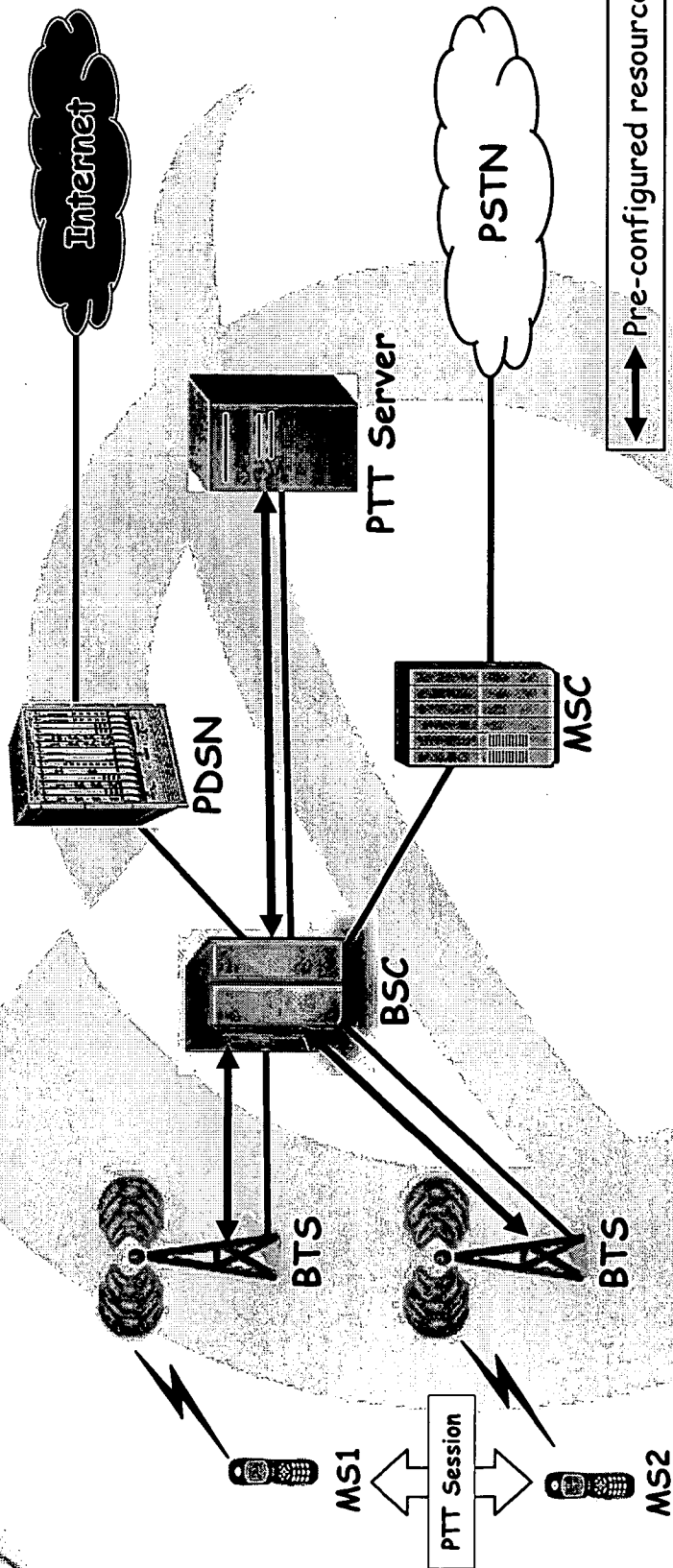
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NETWORKS

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Dedicated Resources for PTT – Example 2

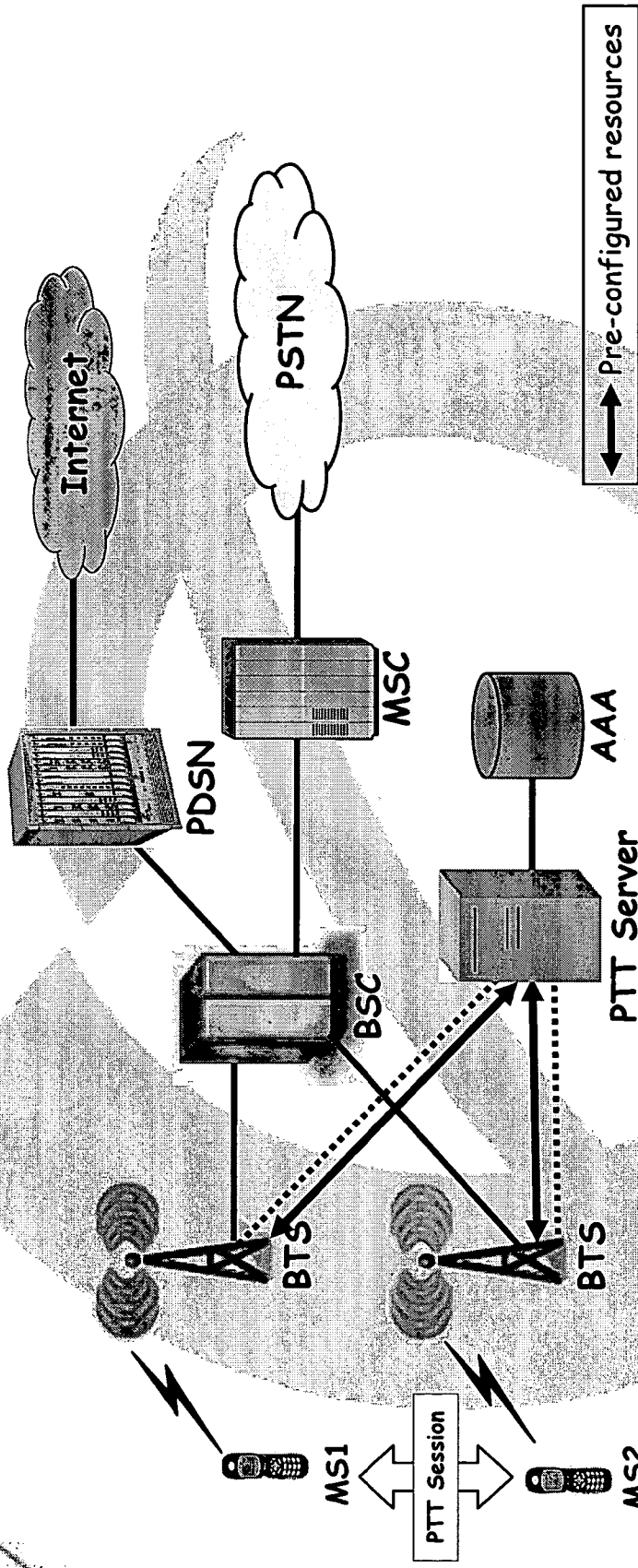


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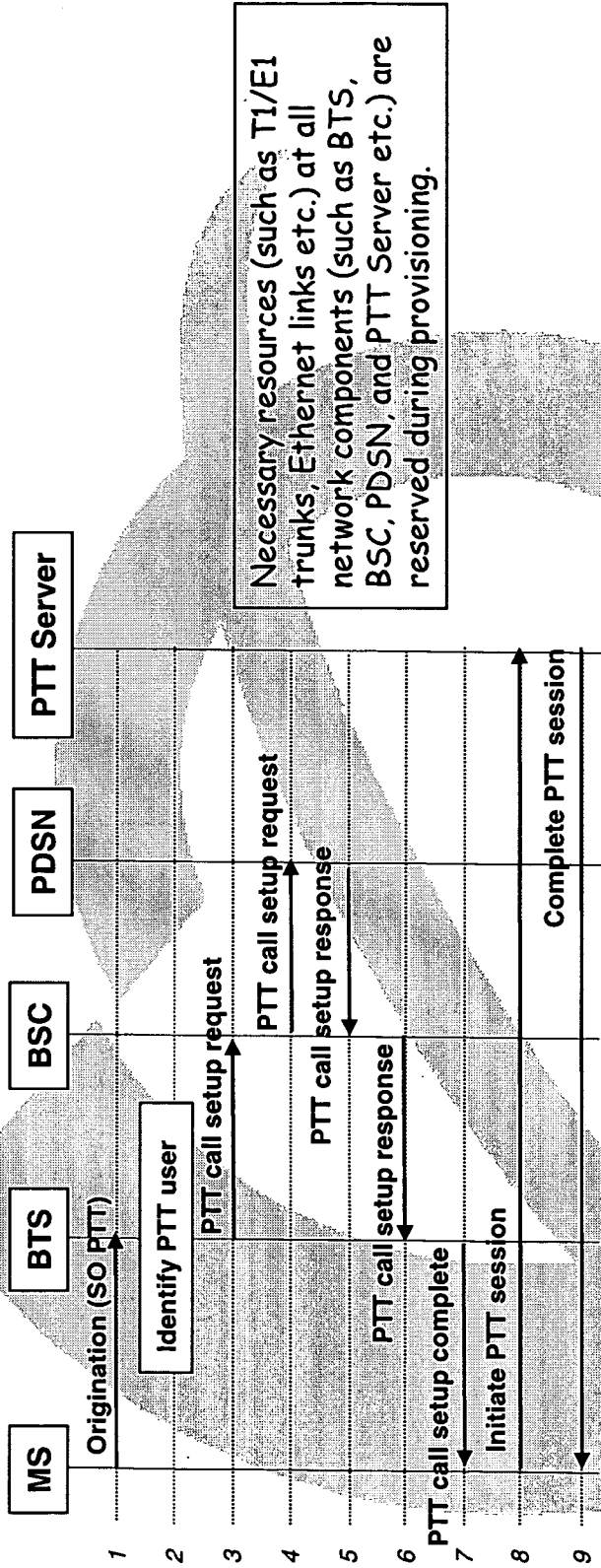
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Dedicated Resources for PTT – Example 3



An Example of High Level Message Flow



Conclusions

- Reserving resources at the major nodes of the wireless access networks (such as BTS, BSC, PDSN, PTT Server etc.) can significantly minimize the call setup time for specific packet-based applications (such as PTT)
- Resources must be reserved while the provisioning of the network (and not during the call set up time).
- The access network must be able to identify the users that are requesting a session for specific packet-based applications (such as PTT).
- The nodes in the access network (such as BTS, BSC etc.) may store enough information (user profile) to identify the users who are requesting a session for specific packet-based applications (such as PTT).
- The identification of the application being requested may be stored in the other databases in the network (such as HLR, AAA etc.).

- Claims:

- 1. A Push-to-Talk (PTT) packet based CDMA wireless telecommunications system comprising, in combination:
 - a plurality of network nodes configured to process and route packet based voice calls; dedicated interconnection links between the network nodes utilized solely in supporting PTT calls so that interconnection links do not need to be established at call setup time for a PTT call thereby improving call setup time for PTT calls.
- 2. The system of Claim 1 wherein the network nodes retain control information with respect of PTT users to further speed call setup when a previously supported PTT user re-accesses the network.